Technology Opportunity

Intercalated Graphite EMI Shielding

The National Aeronautics and Space Administration (NASA) seeks to transfer a new material for the shielding of electromagnetic interference (EMI) for electronic systems in which weight is a critical factor.

Potential Commercial Uses

EMI shielding of sensitive electronics in
- Aircraft
- Spacecraft
- Automobiles
- Notebook computers
- Cellular telephones
- Consumer electronics

Benefits

- Mass savings on spacecraft
- Fuel savings in aircraft and automobiles
- Increased portability of hand-held consumer electronics

The Technology

Bromine intercalated graphite fiber polymer composites have been developed at NASA Lewis Research Center to decrease the mass of spacecraft. This decreased mass can result in the use of a smaller launch vehicle, increased payload capacity, or increased lifetime (by enabling more stabilization fuel to be carried). Although the material's shielding effectiveness is not as high as aluminum, the shielding it does provide (at least 70 dB from 1 MHz to 10 GHz) is adequate for many applications, and equal strength structures weigh less than 15 percent of aluminum structures. This technology has been in development since 1984 and is mature enough to encourage industry to market it. Process patents have been awarded and are available for license. In addition, Applied Sciences, Inc. (Cedarville, OH) has the commercial capability of producing the material in tens-of-pound quantities for test and evaluation.

Options for Commercialization

One of the NASA missions is to commercialize its technology. Our aim at the NASA lewis Research Center is to commercialize the intercalated graphite EMI shielding technology described herein. The commercialization potential for this technology appears to be promising. Industries that may fine applicability include those who produce electrical components for aircraft, spacecraft, automobiles, and portable consumer electronics. The Lewis Technology Utilization Office encourages commercialzation of intercalated graphite EMI shielding technology, and is interested in working with any company that has a sound business plan with a high potential for success. If your company is interested in the possibility of applying intercalated graphite technology, please contact us.

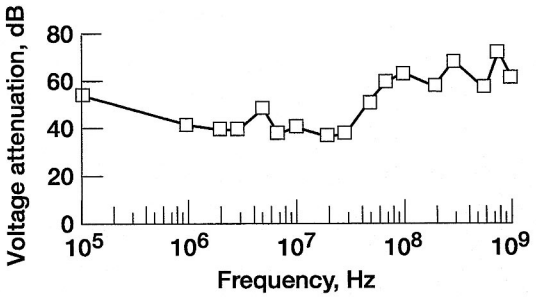

Figure 1.—Intercalated graphite composite box EMI shielding effectiveness.

Contacts

This research is being conducted by Dr. James R. Gaier of the Electro-Physics Branch

Commercial Technology Office
Attn. TOPS
NASA Lewis Research Center
Mail Stop 7-3
21000 Brookpark Road
Cleveland, OH 44135
Phone: (216) 433-3484
Fax: (216) 433-5012
E-mail: cto@lerc.nasa.gov
http://cto.lerc.nasa.gov

Key Words

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